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(55)

Amended Claims

1. Device for joining at least two layers (V1, V2) for forming a multilayer web product (N), comprising a rigid first cylinder (1) and a rigid  
5 second cylinder (3), the latter having protuberances (3P), said first and second cylinders rotating in opposite directions about respective axes of rotation (1A, 3A), and defining between themselves a first nip (5), and further comprising a pressure roller (7), with a resilient surface (7A), that is less rigid than said first and second cylinders (1, 3), said roller interacting with said  
10 second cylinder (3) and means being provided to press said pressure roller (7) and said second cylinder (3) against each other, said pressure roller forming with said second cylinder (3) an embossing nip (9) arranged downstream of said first nip with respect to the direction of rotation of said second cylinder (3), characterized in that: said first cylinder (1) is smooth and means are  
15 provided to press said first cylinder (1) and said second cylinder (3) against each other with a pressure such as to produce a localized mutual adhesion of the two layers passing through said first lamination and ply-bonding nip (5), due to a mingling of the fibers of the two layers; said two previously laminated and ply-bonded layers being passed and embossed in said embossing nip (5).
- 20 2. Device according to claim 1, characterized in that said protuberances (3P) are arranged on said second cylinder (3) according to longitudinal bands parallel to the axis (3A) of said cylinder and to circumferential annular bands.
3. Device according to claim 1 or 2, characterized in that said pressure roller has a rubber coating (7A).
- 25 4. Device according to claim 1 or 2 or 3, characterized in that the protuberances (3P) on said second cylinder (3) are arranged in circumferential and longitudinal bands in order to generate on said web product (N) areas (G) of lamination and embossing in longitudinal and transverse bands.
- 30 5. Method for producing a web product comprising at least a first and a second layer (V1, V2), in which said first and second layers are united by lamination at a plurality of spots, wherein said first and second layers are

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laminated in a nip (5) between a first cylinder and a rigid second cylinder (3), the latter having protuberances (3P), said cylinders being pressed against each other, and the two layers are embossed between said second cylinder (3) and a pressure roller (7) which are pressed against each other, said  
5 pressure roller having a resilient surface (7A),

characterized in that said first cylinder (1) is rigid and smooth and that said first and second cylinder (1, 3) are pressed against each other with a pressure such as to produce a localized mutual adhesion of the two layers due to a mingling of the fibers of the two layers in said lamination spots  
10 corresponding to said protuberances (3P), the bonded plies being embossed between said second cylinder (3) and said pressure roller (7) according to a design corresponding to the distribution of the lamination spots.

6. Method according to claim 5, characterized in that said first and second layers are united by lamination and then embossed along longitudinal  
15 and transverse bands.

7. Method according to claim 5 or 6, characterized in that said web material (N) is divided into individual products (M) by cut lines extending along said longitudinal and transverse bands, the individual products then being folded.

20 8. Method according to claim 5, 6, or 7, characterized in that said layers are embossed so that protuberances (P) of between 0.1 and 1 mm in height are produced on them.

9. A sheet product (M) comprising at least two layers (V1, V2) united along peripheral bands (G) along which said layers are embossed with  
25 embossing design protrusions (P1, P2), said layers being bonded to each other along said bands, characterized in that said layers are additionally ply-bonded by mingling of the fibers of the two layers in localized ply-bonding compression areas, said areas having a distribution corresponding to that of said embossing design protrusions.

30 10. Product according to claim 9, characterized in that the layers have protuberances with a height of between 0.1 and 1 mm along said peripheral bands.